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TELECOM 2-A (TC2A)

(Reimbursable)

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Launch Date: November 1991

Projected SC Life/DSN Support: 7 years/7 days

Project Responsibility: Center National d'Etudes Spatiales (CNES)

Source: SIRD July 20, 1990

Sponsor: CNES

A. MISSION DESCRIPTION

The Telecom 2-A (TC2A) mission will provide high-speed data link applications, telephone, and television service between France and overseas territories as a follow-on to the TC1A, TC1B, and TC1C. The satellite will be placed in a geostationary orbit at TBS deg east longitude.

B. FLIGHT PROFILE

The TC2A will be launched from the Centre Spatial Guyanis in French Guiana on an Ariane launch vehicle. The mission follows the typical injection sequence; i.e., parking orbit, transfer orbit, and drift orbit. Attitude maneuvers will be performed to orient the spacecraft prior to Apogee Kick Motor (AKM) firings. After the final AKM firing, drift phase orbital and attitude maneuvers will be performed to place the spacecraft in its final geostationary position.

C. COVERAGE

The DSN will support the transfer and drift orbit mission phases.

1. Coverage Goals

The coverage will consist of the 26-m antennas at Goldstone, Madrid, and Canberra as prime support for the transfer and drift orbits. Maximum support will consist of two 8-hour tracks per station for a 7-day period, plus 14 days of contingency support.

2. Network Support

The support provided by the DSN is indicated in the following table:

<u>System</u>	<u>Goldstone</u>	<u>Canberra</u>	<u>Madrid</u>
	12 14 15 16	42 43 45 46	61 63 66
S-band TLM	P	B P	P
S-band CMD	P	B P	P
S-band TRK	P	B P	P

NOTE: P = Prime
B = Backup

D. FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

<u>System</u>	<u>Uplink (MHz)</u>	<u>Downlink (MHz)</u>	<u>Polarization</u>
S-band TLM	N/A	TBS	RCP/Linear
S-band CMD	TBS	N/A	RCP/Linear
S-band TRK	TBS	TBS	RCP/Linear

E. SUPPORT PARAMETERS

The support parameters for the Telemetry, Command, and Support Systems are listed below:

(1) Telemetry

Data Streams	1
Format	PCM (SP-L)/PSK/PM
Subcarrier Frequency	40960 Hz
Bit Rates	160 b/s
Coding	N/A
Record	Required

(2) Command

Format	PCM (NRZ-L)/PSK/PM
Subcarrier Frequency	8000 Hz
Bit Rate	1000 Hz

(3) Support

Uplink Power	1 to 10 kW
Antenna Rate	Moderate
Antenna Angle Rate	Required
Antenna Autotrack	Required (26-m only)
Doppler Rates	Modest
Range Format	Tone (Prime) (100 kHz Major Tone)
	DSN Standard (Backup)
Recording	
. Analog	Required
. Digital	Required

F. TRACKING SUPPORT RESPONSIBILITY

The allocation of responsibilities for tracking support is listed in the following table.

<u>Mission Phase</u>	<u>Support Responsibility</u>
Ariane launch	CSG
Transfer/Drift Orbits	DSN
Geostationary Orbit	CNES

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